

Course: DSA

Homework 03

Recursion

Given the Recursion source code folder, students conduct the following tasks.
Students can use `LinkedList<>`, `Stack<>`, and `Queue<>` in Java API for this homework.

Task 1:

Add the following method to the Main class to compute the summation of digits of a positive integer.

public static int sumEvenDigits(int a)

- Args:
 - a: a positive integer
- Return:
 - the summation of even digits

Copy and paste source code of the method here

```
public static int sumEvenDigit(int a) {  
    if (a == 0) {  
        return 0;  
    }  
    else {  
        return (a%10) + sumEvenDigit(a/10);  
    }  
}
```

Task 2:

Add the following method to the Main class to get the maximal item in a non-empty array of integers (there is at least one item).

public static int getMax(int[] a, int n)

- Args:
 - a: a non-empty array of integers
 - n: number of items which need processing
- Return:
 - the maximum

Copy and paste source code of the method here

```
public static int getMax(int[] a, int n) {  
  
    if (n == 1) {  
        return a[0];  
    }  
    else {  
        if (getMax(a,n-1) > a[n-1]) {  
            return getMax(a, n - 1);  
        }  
        else return a[n-1];  
    }  
}
```

Task 3:

Add the following method to the Main class to print down upper letters of a string. Note that letters are printed down in the same order as their indices.

public static void printUpper(String s, int n)

- Args:
 - s: a string with alphabetic letters
 - n: number of letters which need processing
- Return:
 - none

Copy and paste source code of the method here

```
public static void printUpper(String s, int n) {  
    if (n == 0) {  
        System.out.print("");  
    }  
    else {  
        char ch = s.charAt(n-1);  
        printUpper(s, n-1);  
        System.out.print(Character.toUpperCase(ch));  
    }  
}
```

Submission Notice:

- Export your answer file as pdf
- Rename the pdf following the format:

hw03_<student number>_<Full Name>.pdf

E.g: **hw03_123456_NguyenThanhAn.pdf**

If you have not been assigned a student number yet, then use 123456 instead.

- Careless mistakes in filename, format, question order, etc. are not accepted (0 pts).